

value could be an  $x$  multiple, as in total portfolio risk is  $5x$ , or it can simply be a fixed barrier past which you do not want to lose. As you consider this number, think about the asymmetry of the gains required to recover a large loss. Too often, traders simply focus on the upside without really being aware of the risks they are assuming or the potential long-term effects of large losses. Manage the risk first and foremost, and the upside will take care of itself.

## PRACTICAL ISSUES

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This chapter has presented many ideas, but I hope a clear picture has emerged: There are many possibilities in how to manage trades. Ideas have to be adapted to your own personality and trading system, and not everything works. You cannot simply pick and choose random ideas, put them together, and expect good results; you must do the hard analytical work and be sure that you are crafting a rule set that really has an edge. Finding patterns to get into the market is only one small part of the picture; some traders would argue that it is one of the least important pieces. Once that is accomplished, trading size, risk, initial stop placement, and how to manage the evolving trade become very important—answers to all of these questions must be worked out in advance. In addition, the market is dynamic and will throw many surprises at traders. Field Marshal Helmuth von Moltke's statement that "no battle plan survives first contact with the enemy" is as applicable in trading as in war; experienced traders learn how to adapt and to make decisions within the framework of their rules as the trade evolves.

To make these ideas easier to apply, we need to connect the dots and consider some of the practical issues that traders will face. Many of the ideas in this section are directed to the trader holding overnight positions, but can be applied, with little modification, to traders who hold only intraday positions. Portfolio managers building portfolios and managing risk in the traditional models may also find some ideas that they can apply in their investment process as well. Newer traders should also be wary of trying to do too much at once and of trying to trade too many markets. It is far better to have on one or two positions and to know everything about those markets than to get lost trying to manage positions in eight different markets.

The work of monitoring and reviewing your positions must be done every day without fail. The less you want to do it, the more important it is. Traders usually will find excuses to skip reviews on days they have incurred losses, or after a string of losing days, but these are precisely the points at which you must do even more work. Of course, you may need to stop the bleeding in your account, but these moments are also exceptional learning opportunities. It is possible that you are simply suffering at the hand of a random market, but it is also possible that your behavior and your decisions have been suboptimal. Asking the hard questions is always painful, but the alternative is to keep losing. Every moment in the market is a learning opportunity; make sure you are doing the work to benefit from those opportunities.

## Monitoring Tools

Another point to consider is how often you will look at your positions. If you are an intraday trader, you must be present at the screen every moment of the trading day. You will eat lunch at the screen and will reduce your break time to the bare minimum necessary for taking care of bodily functions, and there will be days you will even skip those. One of the advantages of being a trader with a longer time horizon is that it is acceptable to monitor your positions less frequently. For instance, a two-day to two-week swing trader can legitimately check in on her positions two or three times a day, perhaps on the open and again near the close, if there is a system in place for monitoring and catching unusual moves in her markets. Longer-term investors may well check in on their portfolios once a week, but it still behooves them to check daily for large and unusual moves in their holdings or in related markets. It is much easier to do this with some basic infrastructure in place to support these functions.

**Position/Risk Sheet** Figure 8.6 shows an example of a daily risk and P&L sheet. For most traders, this is perhaps the most important daily record. After each session close, it serves the purpose of reviewing and summarizing the day's P&L and of measuring the intended risk for the next session. While the market is actually open, the stop levels and risk information on this sheet are important reminders and guides for behavior. Most traders get into trouble when they ignore risk parameters and end up taking large losses that are multiples of intended risk. Having this document and committing to following it religiously will insulate the trader from some of these catastrophic losses. Figure 8.6 is only an example showing the simplest and most basic information needed on this sheet. You can take this model and elaborate on it to fit your style and your needs.

Though some of the fields are self-explanatory, this sheet is extremely important, so it is worth the time to go through it in some detail:

- **DateIn:** This is the initial entry date of the first trade for the position.
- **Patt:** It is a good idea to have some way to distinguish among trades placed by different systems, from different patterns, or on different criteria. If you have only two or three positions, this may not be necessary, but it becomes important once you have on more than four or five. Furthermore, this classification is essential when doing statistical analysis of your trade results.

DateIn	Patt	Ticker	L/S	#	PriceIn	Close	P&L				Risk			
							OpenPL	ClosedPL	TotalPL	PL%R	Stop	Risk	PLStop	1StDev
6/14/11	PB	WX	L	800	72.08	71.63	(360)	0	(360)	-0.1X	67.25	(3,504)	(3,864)	1,328
6/13/11	Sup	CDE	L	1,000	41.43	41.62	193	(208)	(15)	-0.0X	40.05	(1,570)	(1,585)	740
6/10/11	Anti	ZZZ	L	750	11.05	12.55	1,125	2,865	3,990	1.1X	11.35	(900)	3,090	405
6/13/11	PB	ABC	S	375	105.89	106.64	(281)	0	(281)	-0.1X	115.00	(3,135)	(3,416)	(1,076)
6/10/11	PB	XYZ	S	2,750	29.93	29.19	2,032	771	2,803	0.7X	29.46	(742)	2,060	(2,200)
5/24/11	Res	BB	S	500	22.99	19.04	1,976	3,175	5,151	1.4X	20.50	(730)	4,421	(310)
Total							4,684	6,603	11,287	3.0X		(10,582)	706	(1,113)

**FIGURE 8.6** A Basic Daily Risk and P&L Sheet

- **Ticker:** This one is self-explanatory. If you are not completely comfortable with futures and options symbology, you might consider a field here in plain English.
- **L/S:** Long or short.
- **#:** Net size in shares, contracts, or units. This can be more complex than it seems, as it is common to have a position on and add and subtract to it as the trade develops. At any time, this number must reflect your net exposure coming into the day's session.
- **PriceIn:** The average price of the position. This can be surprisingly complicated, as it raises some accounting issues. For instance, imagine you buy one contract at \$10, later buy another at \$15, and then sell one at \$20. Your net position is obviously 1 ( $1 + 1 - 1$ ), but what is the entry price? There are actually two right answers, but the calculation has to be done correctly and consistently from an accounting standpoint. The two choices are first in, first out (FIFO) or average price. Using the example, FIFO would keep your entry price at \$10 for the one contract, recording a \$5 win on a closed trade for one contract. Average price would show the long position marked from \$12.50 (average of \$10 and \$15), recording a closed trade win of \$7.50. Both methods will show the same total P&L for the sum of open and closed trades, but it is important to understand which system is being used to mark open trades.
- **Close:** The settlement price for the instrument you are trading. Ideally this should be the same price that your broker's statement uses for settlement to make this P&L record match your broker's statement as closely as possible.
- **OpenPL:** This is the P&L associated with the open portion of the position. Again, there is an accounting issue to be resolved, because this will depend on how the entry price for the open position is calculated.
- **ClosedPL:** This is the closed P&L associated with the OpenPL position on this sheet. For instance, it would be possible to be carrying an open P&L of a \$1,000 loss while having closed out \$5,000 of the same position at a profit. The \$1,000 loss, taken alone, would be misleading and must be considered together with the closed P&L. Also, the actual closed P&L will be different depending on the particular accounting system chosen, but the *total* of the open and closed will be the same, regardless. One more issue to consider is that sometimes a trade will be closed, and then another trade will be initiated that is a continuation of the first trade. Make sure you have considered these possibilities and planned for them in your accounting package. There is no one right way to deal with these issues, but you must be absolutely consistent.
- **TotalPL:** The total of the OpenPL and ClosedPL for this particular trade. This number will be the same regardless of the accounting method used, as the choices between FIFO and average price affect only the distribution of P&L between open and closed trades.
- **PL%R:** This is the P&L on the trade, expressed as a ratio of the amount initially risked on the trade.
- **Stop:** The stop-loss point for the trade. If the position carries multiple stops, you may need to create a sheet to show all of those points or simply display the one closest to the market (the highest stop level for a long trade or the lowest level for a short).
- **Risk:** The name of the column is slightly misleading, and should be the *intended* risk on the trade. This shows the size of the loss from the current price (closing price in

this case) to the stop-loss level for each individual trade, or the maximum intended loss this position would incur the next trading session. Be aware that an opening gap could result in a much larger loss than indicated on the sheet. It is also possible that market conditions such as liquidity or a sudden price spike intraday could make it impossible to execute the stop at the intended level. Just remember, it is certainly possible to have a loss that is larger than the intended risk.

- **PLStop:** This field shows the total trade P&L if the stop were hit. In other words, it is the current, total P&L (open and closed) for the trade minus the Risk field. Use this as a what-if scenario to judge your overall risk on the trade.
- **1StDev:** It is helpful to have some sort of dollar-adjusted volatility measure that shows you how much the position is likely to swing on an average day. This helps to moderate expectations as a proxy measure of risk. The choice of volatility measure to use is a personal decision; I use 20-day historical volatility, but Average True Range, average absolute change, or any other measure could be adapted, depending on what you are trying to accomplish. (An excellent plan might be to use the higher of 20-day historical volatility or implied volatility.) If you are assessing risk, it probably makes sense to use a multiple of this number in your mental calculations—for instance, expecting that many markets could make moves 3 times this volatility measure while also remembering that extremely large moves (10 times or more) are possible. It is also a good idea to consider the sum of these numbers, or, more properly, a correlation-adjusted sum, as an assessment of single-day portfolio risk.

Use this sheet as a departure point for your own position and risk management system. It is relatively easy to build a P&L tracking system that incorporates your trades in real time into a spreadsheet that also updates with live market prices. Though brokerage software and execution platforms do provide position accounting, there is currently no retail-level platform that provides this degree of risk and position information. There is some value to having a hard-copy, printed-paper version of this sheet every day, but remember (obviously) that it will show positions as they stood at the end of the previous day. Active traders may find a real-time spreadsheet a more viable solution, or they may prefer to update the written sheet several times during the trading day. Last, some traders will find it helpful to *not* report P&L in actual dollars, but rather to standardize everything either for unit risked or as a percentage of the account equity. This could be done by reworking all of the fields on the sheet that show dollars to show risk multiples of the intended risk on the trade. As long as the risk levels are comparable, the P&L between trades will also be comparable.

**Dynamic Tracking Tools** Very long-term investors who intend to hold positions for many months or quarters can safely ignore all but the largest single-day moves in their positions as noise. The rest of us do not have this luxury; even for the multiweek swing trader, a single large day can have a dramatic impact on the total P&L of a position. Many traders will not want to flip through charts of many positions every day. It is far better to have some kind of consistent screen that presents relevant data for movements in your



positions and related markets. For futures and currency traders, I would recommend two sections to such a screen: markets in which you have positions and every other significant market, tracking front month or ratio-adjusted continuous contracts in all futures markets. This is, at most, 30 markets for domestic futures traders, so it is certainly a manageable number. Traders trading spreads can adapt this concept to track a number of spreads in addition to outright. For equity traders, the situation is considerably more complex because of the number of moving pieces in the market. I would recommend that equity traders start with a screen that has four divisions: first, your actual positions; second, major broad market indexes representing three or four slices across market capitalizations (i.e., S&P 500, Russell 2000, Nasdaq Composite); third, 9 or 10 broad sector indexes (energy, financials, etc.); and fourth, perhaps 50 significant names drawn from various sectors. The list of significant stocks will change over time, but should be high-volume, high-visibility stocks in each sector so that you will see the impact of news on these leaders possibly even before it filters through to the broad sector. Once you have the selection of markets you wish to follow, consider tracking some of the following specific quantitative elements.

- The most obvious screen is one that is probably provided by your brokerage software, a *simple accounting of the P&L* for each position. I find it useful to track P&L in three pieces: the day's change or P&L marked from the previous close, any closed P&L related to the position, and the total P&L from inception. Some of this accounting will probably have to be done manually, and the risk sheet in the previous subsection shows one way to incorporate open and closed P&L into a total position P&L. It is also good to be able to track where, at any instant, each market is in relation to predefined stop and target levels. Ideally, this distance should be measured on some volatility-adjusted basis, for instance as an ATR multiple or a standard deviation. Comparisons made on a simple raw point or dollar basis are not very useful; everything must be adjusted for volatility.
- Particularly for equity and futures traders, some tool to monitor *gap openings* is very helpful. Of course, these can mean dramatic and immediate changes in the P&L for any existing position, but many gaps in related markets (e.g., stocks in the same sector or industry) can show an imbalance that might have a lasting influence through the trading session. More and more markets are moving toward becoming true 24-hour markets; gaps in those markets are not actual gaps but are the result of overseas trading in our off-hours. Most futures markets are technically at this point already, and currencies certainly are. In another decade, this focus on overnight gaps is likely to seem like a quaint anachronism, but, for now, the open of our U.S. session is still important for many markets.
- It is also helpful to have a tool that simply identifies markets that are making *large moves that day*, perhaps with large changes in volume if that is relevant for the market you trade. It is important to standardize these measures of large moves and volume for recent market history; many traders use ATR multiples, saying, for instance, a particular stock is up 1.5 ATRs while another is up only 0.5 ATR. My personal

preference is to use my volatility spike indicator, which simply expresses the current day's change (last print to previous day's close) as a standard deviation of the past 20 trading days. I have a screen that updates the day's change as a standard deviation for a number of markets and color codes any move larger than three standard deviations up or down. This makes it very easy to see, at a glance, what is going on even if I am looking at a quote screen with several hundred tickers. If you look at the board and see only white, it is probably a boring day. If you look back later and see a sea of red, then you know that something has changed and that long positions may demand attention.

Last, you may want to consider other measures of unusual activity in the markets and positions you are following. The simpler these tools are, the more robust and useful they are likely to be. It is easy to be seduced by the power of the programming tools available and to try to create elaborate, complex monitoring tools. In most cases, this is not necessary and is even counterproductive. You simply need to know when your positions or related markets are moving with unusual activity on the day.

### A Tool for Tracking Positions Intraday

Some of the best ideas really are the simplest. For intraday position monitoring, I also use a tool that shows where the current price is in the day's range in a simple text graph format. This has proven to be an extremely useful tool for intraday traders to visualize order flow and relationships across many markets, and can even help longer-term traders read the flow in a market. Here is the basic eight-step procedure for creating this tool:

1. Calculate the *close as percent of day's range* =  $[(\text{last print} - \text{day's low}) / \text{day's range}] \times 100$ .
2. Calculate the *open as percent of day's range* =  $[(\text{open} - \text{day's low}) / \text{day's range}] \times 100$ .
3. Create a text variable that consists of 10 dashes = "- - - - - - - - - -".
4. Each dash is a decile. Replace the dash that corresponds to the *open as percent of day's range* with the colon (:) character.
5. Replace the dash that corresponds to the *close as percent of day's range* with the pipe (|) character. If the colon already occupies that space, overwrite it with the pipe.
6. If the current price is the absolute high of the day, replace the entire string with "===== >".
7. If the current price is the absolute low of the day, replace the entire string with "< =====".
8. Color code as desired. One idea might be to color code the entire indicator red for any values where *close as percent of day's range*  $\leq 20$ , and green if  $\geq 80$ .

### Practical Tips on Execution

It is difficult to give guidelines on execution that will apply across many different asset classes and time frames, but there are a few commonalities to consider. First of all, you

can choose to be either a price maker or a price taker—to add or take liquidity from the book. Particularly for very short-term traders who do a lot of volume, the rebates associated with adding liquidity to the book can help to offset a significant portion of their transaction costs, so it makes sense for these traders to execute on limit orders, adding liquidity as often as possible. However, it is also important to consider the adverse selection effect associated with limit orders, meaning that if you focus on limit order executions, you will always be in every losing trade, but you will price yourself out of some winning trades.

In general, be careful with market orders. True market orders have no price limit and you have no recourse in the event of a very poor fill. It is even possible, in some markets, to be filled outside the day's range at a price where the asset never traded. We refer to the difference between the intended price and the actual execution price as *slippage*, and it is a serious cost in some markets. Very large market orders will eat through a significant amount of the liquidity in the book, sometimes moving prices significantly. A market maker's biggest fear is running into an informed trader who executes a large order in the market, placing the market maker, by definition, on the other side of that order. Market-making algorithms monitor the way orders are hitting the bids and offers, and they identify large market orders taking a lot of liquidity as potentially informed traders. To protect themselves, the market makers then widen spreads and step away from the inside market, which further exacerbates the impact of these large market orders.

When and if you must use market orders, do so with discretion. Break up large orders into smaller pieces if possible and execute them over a longer time period. *Marketable limit orders* should almost always be used instead of pure market orders. A marketable limit order is an order that is placed on the wrong side of the market: a limit order to buy normally goes on or under the bid, but a marketable buy limit order is placed at or above the offer. A marketable sell limit order similarly goes at or under the bid. Marketable limit orders may well clear liquidity and result in slippage up to the limit price, but they avoid the possibility of a very large adverse fill with the trade-off that a marketable limit order may not be filled at all. If the order scares the market and sends price moving without completely filling the order, the remainder will continue to work as a limit order at the limit price. Perhaps the only time you may want to consider an outright market order is as a stop loss on a position, when you really want out at whatever cost. Otherwise, make the marketable limit order your standard tool.

Most traders, especially shorter-term traders for whom the spread represents a greater portion of their profit and loss, should think about executing at least one side of the trade on a limit order if possible. If you enter on a market order (marketable limit order), get out of your position on a limit order. If you enter via a limit order, you can use a market order for exit. Paying the spread on both sides of the trade can be a serious loss of efficiency. For instance, a short-term scalper may be playing for a profit of 0.10 with an intended risk of 0.10. If she gives up 0.02 on both the entry and the exit due to the spread, then her winning trades become 0.06 and her losers become -0.14. For higher-time frame traders, this factor is less important, but it is still good to build the discipline of trying to execute one side of the trade on limit orders as much as possible. Of course, when you are wrong, it is usually better to get out without messing around. Far better to

simply hit a bid to get out than to offer at successively lower prices, as your offers will add pressure that will drive the price still lower. Most traders will find best results in not being too obsessive about execution prices in losing trades—just get out.

### Large Orders, Thin Markets

Executing large orders in thin markets can be challenging, but it is often possible, with time and skill, to do even a multiple of the average daily volume in many markets without moving price too much. There is an unavoidable trade-off between urgency of execution and adverse price impact; the faster you must do an order, all other things being equal, the more you will move the market. Executing large orders is a specific skill that must be developed over time, and, like everything else in trading, probabilities apply—it is not possible to do this perfectly every time. There are three approaches to consider for these executions:

1. Break them up into smaller pieces and do them as much as possible on the bid or just in front of the bid. Use hidden orders whenever possible, and experiment with probing in between the bid and the offer to see if there are other hidden orders. For instance, assume that you need to buy 200,000 shares in a thin stock that does an average of 100,000 shares a day, is currently bid at 10.00 and offered at 10.20, and is not printing. Your first approach should be to place a hidden order at 10.02 to 10.05 and see if you are filled there. Once that order is working, you can try other hidden limit orders from 10.05 to 10.18, seeing if you will find any hidden orders there. You will usually have best luck placing very large orders so that if they meet another large order they will be filled. Be aware, if you do get lucky and print 50,000 shares at 10.12, the stock will probably adjust instantly and be bid at 10.20 and offered at 10.50 or something even worse. Be patient after these first fills and continue the process until the order is done. Above all, avoid paying the offer, as even a few hundred shares taken on the offer can send the stock bid well above those last prices. (Similar considerations apply in thin futures markets.)
2. This is highly counterintuitive, but many times thin books are a lot more liquid than they look. If you are trying to buy large size in a thin market, you may have good results showing most or all of your bid at a price near the offer. If you are unable to find any fills in the middle of the spread (10.00/10.20 as in the preceding example), you may want to show your full size at 10.15 or so. Being willing to give up most of the spread and showing your full size clearly tells the marketplace that you are a real, natural buyer. Yes, there will be times when the market instantly goes 10.40 bid, but these are offset by the times a natural seller will fill your whole order at 10.15.
3. Use an algorithm to do the execution. Most traders will start here, and this is probably the best plan for most situations. Most algorithms will follow some variation of the plan in the first bullet point, but they will do so with the advantage of being able to monitor many levels in the order book with constant vigilance. In addition, some algorithms have preferred access to various dark pools, and may be able to cross a significant portion of the order there.

Thin, illiquid markets are a double-edged sword. On one hand, illiquidity is *good* when you're on the right side of a trade. An illiquid market will usually move in the anticipated direction much faster, as there is less two-way trading and disagreement over price—the quest for the theoretical market-clearing price is much cleaner when there is less noise in the order book. Common sense dictates that partial exits in these cases should be taken in the direction of the price movement: sell existing longs into strength and buy back existing shorts on weakness. Yes, this means you will almost never sell the very top of a move or cover the very bottom, but you will, in general, be much more efficient if you do not pay the spread. The cost of getting out of thin markets when you are on the wrong side can be extreme. Even if you are watching the order book, you may not be able to execute against displayed liquidity, as it is pulled from the book far faster than you can humanly react.

One last thing to consider is the issue of mistakes. Everyone makes mistakes. Even if you are trading a completely automated system with little human interaction, there will still be some errors. You *will* make mistakes, and, while it is important to minimize the frequency with which they occur, it is equally important to accept that they will happen and to plan for how to handle them. Perhaps you buy instead of sell. Perhaps you mean to execute in one market but you actually execute an unintended order in another market. Perhaps you enter a stop or limit order with a wrong price and it triggers when you did not intend it to. Perhaps an exit order was canceled and you find yourself with a position you did not expect to have, at either a profit or a loss. The question is not so much how you make yourself mistake-proof as what you do when these things happen, and the answer is simple: fix the mistake immediately. Do not consider whether you are happy to have the position or whether you can trade out of it somehow. Do not think. Do not justify. Just fix the mistake. This is a matter of discipline and it must be enforced every time an error happens.